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Subject: Energy Efficiency and Water Conservation w/Change 2 (4/04/08) REVALIDATED

Responsible Office: Environmental Management Division

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APPENDIX C. Summary of Legislation and Executive Orders Fostering Federal Energy Efficiency

C.1 Legislation for Federal Facilities and Operations

C.1.1 Reference. Most of the following material is from the U.S. Congress Office of Technology Assessment (OTA), "Energy Efficiency in the Federal Government: Government by Good Example?," OTA-E-492, U.S. Government Printing Office, May 1991.

C.2.1 General. Congress has addressed the issue of improving energy efficiency in the facilities it owns and leases and in its operations several times since the mid-1970s. Each new piece of legislation has combined past experience with new approaches in an effort to promote further efficiency gains in Federal agencies.

C.2.2 Energy Policy and Conservation Act (EPCA), 42 U.S.C. 6201 et seq. The EPCA of 1975 was the first major piece of legislation to address Federal energy management, directing the President to develop a comprehensive energy management plan, including procurement practices, and a 10-year building plan. The EPCA included few details, leaving those to the executive branch. The EPCA also amended the Motor Vehicle Information and Cost Savings Act to require that the Federal automotive fleet meet or exceed the corporate average fuel economy mileage standards.

C.2.3 Department of Energy Organization Act (DOEOA), 42 U.S.C. 7101 et seq. Section 656 of the DOEOA of 1977 established the Federal Interagency Energy Policy Committee (often called the "656 Committee"). The 656 Committee is a senior agency management group comprising an assistant secretary or assistant administrator from each of the Departments of Defense, Commerce, House and Urban Development, Transportation, Agriculture, and Interior; from the U.S. Postal Service; and from the General Services Administration. The NASA and the Department of Veterans Affairs have also designated members for the committee. The committee is intended to strengthen energy conservation programs that emphasize productivity through the efficient use of energy and to concurrently encourage interagency cooperation in energy conservation. It meets periodically to discuss policy options and review agency progress toward Federal conservation goals. One of its purposes is to focus the attention of top Federal agency management on the tasks and missions related to national energy objectives rather than on the tasks of a particular agency.

C.2.4 National Energy Conservation Policy Act (NECPA), 42 U.S.C. 8251 et seq. In the NECPA of 1978, Congress took a more active role in defining detailed steps to be followed by the executive agencies. Several of the steps included in this legislation had been set forth by the President in Executive Order (EO) 12003 in 1977 (see below). For example, where the EPCA directed the President to develop an energy-related procurement policy, the NECPA

specified the use of a "life-cycle costing methodology" as the basis of policy. Similarly, where the EPCA directed the President to develop a 10-year building plan, the NECPA included details such as which buildings were subject to energy audits (all those exceeding 1000 square feet). Both of these NECPA provisions were part of EO 12003. Unlike EO 12003, the NECPA set no goal for percentage reduction in energy use, but instead specified the minimum rate at which Federal buildings had to be retrofit with all cost-effective measures. All buildings were to have been retrofit by 1990. The main provisions of the NECPA were codified as the Federal Energy Initiative.

C.2.5 Federal Energy Management Improvement Act (FEMIA), Public Law 100-615. The FEMIA of 1988 amended the NECPA and modified and added several provisions to the Federal Energy Initiative. A central provision was the establishment of a goal to reduce energy consumption per square foot in Federal buildings by 10 percent between 1985 and 1995. Operations energy (i.e., energy used for transport or in energy-intensive activities such as nuclear reactors) was not included. FEMIA marked the first time that Congress specified the level of savings that should be achieved. Also, as an incentive to encourage use of SES contracts, Congress allowed agencies to retain a portion of cost savings for future energy conservation measures. Furthermore, the FEMIA created an Interagency Energy Management Task Force, and directed the Department of Energy (DOE) to carry out an energy survey in a representative sample of Federal buildings to: (1) determine the maximum potential cost-effective energy savings that may be achieved, and (2) make recommendations for cost-effective energy efficiency and renewable energy improvements.

C.2.6 Energy Policy Act of 1992 (EPACT), Public Law 102-486. EPACT Title I, Subtitle F, *Federal Agency Energy Management*, establishes Federal agency goals and requirements and amends the NECPA to reflect and supplement goals and requirements set forth in EO 12759. The EPACT:

- a. Requires that all energy and water conservation measures with Life-Cycle Cost (LCC) paybacks of less than 10 years be installed in all Federal buildings by January 1, 2005.
- b. Contains provisions regarding energy management requirements, LCC methodology, budget treatment for energy conservation measures, incentives for Federal agencies, reporting requirements, new technology demonstrations, and agency surveys of energy-saving potential.
- c. Authorizes GSA to receive rebates, other incentive payments, or goods and services from utilities and deposit funds into the Federal Buildings Fund for use in energy management improvement programs; and requires GSA to report annually to Congress on its activities related to Federal agency energy management.
- d. Amends sections of the NECPA relating to shared energy savings (SES), provides new language giving agencies authority to enter into energy performance contracts, and describes the methodology of contract implementation.
- e. In regard to intergovernmental energy management planning and coordination, requires GSA, along with the Interagency Energy Management Task Force, to hold five conference workshops in FY93 on energy management, conservation, efficiency, and planning strategy, and to hold biennial workshops in each of the 10 standard Federal regions thereafter.
- f. Requires Federal agencies to establish and maintain programs to train energy managers and to increase the number of trained energy managers within each agency. The Act defines a "trained energy manager" as "a person who has completed a course of study in the areas of: (1) fundamentals of building energy systems, (2) building energy codes and applicable professional standards, (3) energy accounting and analysis, (4) LCC methodologies, (5) fuel supply end pricing, and (6) instrumentation for energy surveys and audits."
- g. Requires DOE to make available energy audit teams for Federal facilities and to establish programs to monitor the implementation of energy efficiency improvements based on energy audit team recommendations.
- h. Directs the OMB to issue guidelines for accurately assessing energy use in Federal buildings or facilities to be used in agency reports to DOE, and directs GSA to report annually on the estimated energy costs for leased space in which the Government does not pay these costs directly.
- i. Directs agency Inspectors General to assess agency compliance with existing energy management requirements as well as the accuracy of energy-use and cost data reported by Federal agencies, and encourages periodic review.
- j. Directs GSA, DoD, and Defense Logistics Agency to identify energy-efficient products on the Federal supply schedules that offer significant potential for LCC savings.
- k. Requires DOE to report to Congress on options for financing conservation measures, including an assessment of the investment required and the possible use of revolving funds.
- l. Directs agencies to establish criteria for improving energy efficiency in Federal facilities operated by contractors and to include such criteria in all cost-plus, award-fee contracts.
- m. Confirms and expands upon the activities and goals of Section 11 of EO 12759 dealing with Federal fleets. Amends the Alternative Motor Fuels Act (AMFA) to include all types of alternative fuels and all types of light duty trucks, and changes the definition of fleet to "20 or more vehicles in metropolitan areas of more than 250,000

people." Requires consideration of pollution-reduction potential, requires alternative fuel use in dual-fuel use, requires 50 percent domestic fuels, requires heavy-duty use and disposal reports, and repeals termination of the AMFA. Requires the use of commercial refueling facilities if available, but authorizes funds for refueling facilities if necessary.

n. Mandates fleet requirements for new acquisitions to the Federal fleet [i.e., FY93, 5,000 alternative-fuel vehicles (AFVs); FY94, 7,500 AFVs; FY95, 10,000 AFVs; FY96, 25 percent; FY97, 33 percent; FY98, 50 percent; and FY99, 70 percent]. Allows allocation of AFV incremental costs to be spread over all agency vehicles and authorizes funds as necessary for fiscal years 1993 to 1998.

o. Requires DOE and GSA to establish an agency promotion, education, and coordination program; allows GSA to offer leased AFVs at lower costs as an incentive for three years; requires GSA to establish a recognition and incentive program for Federal employees; directs GSA to measure the use of alternative fuels in dual-fuel vehicles; and reduces data collection required to a representative sample.

C.3 Executive Orders for Federal Energy Efficiency

C.3.1 Reference. The material in this paragraph is also mostly from the OTA except for EO's 12902, 13123, 13148, and 13149.

C.3.2 EO 11912, "Delegation of Authorities Related to Energy Policy and Conservation," 3 CFR (1976 Compilation). There have been several EO's related to Federal energy efficiency. The earliest was EO 11912 of 1976, which delegated authorities related to energy and conservation. Among other things, this order defined the following roles of various Cabinet Departments with responsibility for Federal energy use:

- a. The Administrator of GSA was designated to take on the functions assigned to the President by the Motor Vehicle Information and Cost Savings Act, as amended, directing that rules be established to require the Federal fleet to achieve an average fuel economy of at least that applicable to vehicle manufacturers.
- b. The Administrator of the Federal Energy Administration (now the Secretary of Energy) was made responsible for coordination of a 10-year energy conservation plan for Federal buildings, energy conservation and rationing contingency plans, and preparation of annual reports to be submitted to Congress as required by the EPCA.
- c. The Administrator of the Office of Federal Procurement Policy was required to provide policy guidance for application of energy conservation and efficiency standards in the Federal procurement process as mandated by the EPCA.

C.3.3 EO 12003, "Relating to Energy Policy and Conservation," 3 CFR (1977 Compilation). EO 12003, issued in 1977, amended EO 11912 and aggressively expanded the requirements of the Energy Policy and Conservation Act of 1975. For example, it specified a goal of a 20 percent reduction in energy use per square foot in existing Federal buildings and required the Federal automobile fleet to exceed the minimum statutory requirement by 4 miles per gallon beginning in fiscal year 1980. As noted above, some of its provisions are also found in the NECPA. Key provisions of EO 12003 include the following:

a. The Administrator of the Federal Energy Administration (now the Secretary of Energy) was directed to accomplish the following:

(1) Develop, implement and oversee a 10-year energy conservation plan for Federal buildings over 5,000 square feet for the 1975 to 1985 period which would achieve a 20 percent reduction in energy use in existing buildings and a 45 percent reduction in all new buildings.

(2) Establish a life-cycle-cost methodology.

(3) Report to Congress annually on the progress of the plan.

b. The Administrator of GSA was directed to ensure the following:

(1) All passenger automobiles purchased by executive agencies exceed the manufacturers' corporate average fuel economy standard under the Motor Vehicle Cost and Information Act.

(2) The Federal passenger automobile fleet exceeds minimum statutory requirements by 2 miles per gallon in fiscal year 1978, and by 4 miles per gallon beginning in 1980.

(3) The Federal light truck fleet also meets minimum standards, although not required under the Motor Vehicle Cost and Information Act.

C.3.4 EO 12083, "Relating to Certain Functions Transferred to the Secretary of Energy by the Department of Energy Organization Act," 3 CFR (1978 Compilation). In 1978, EO 12083 created an Energy Coordinating Committee composed of the Secretaries of the major Federal agencies. Its mission is to assure Federal coordination on energy-related matters, including both policy initiatives and resource allocation. In addition to the committee, an Executive Council was formed consisting of the Secretary of Energy, Chairman of the Council of Economic Advisors,

Assistant to the President for Domestic Affairs and Policy to fulfill the functions of the committee during periods when the committee was not meeting.

C.3.5 EO 12375, "Motor Vehicles," 3 CFR (1982 Compilation). EO 12375 of 1982 further amended EO 11912 to reduce the required Federal passenger automobile fleet efficiency established in EO 12003. Whereas EO 12003 required the Federal passenger fleet to exceed manufacturers' average fleet efficiency by 4 miles per gallon, EO 12375 required only that the Federal fleet meet the manufacturers' average efficiency and that light trucks meet standards set by the Secretary of Transportation. This EO contrasted sharply with EO 12003, which was far more ambitious and went beyond some minimum requirements set by Congress.

C.3.6 EO 12759, "Federal Energy Management," 3 CFR (1991 Compilation). On April 17, 1991, EO 12759 was issued with provisions to accomplish the following:

- a. Extend the FEMIA Federal building reduction goal to 2000, requiring BTU per gross square foot to be reduced 20 percent from 1985 levels.
- b. Require agencies to prescribe policies for improving energy efficiency of industrial facilities by at least 20 percent in 2000 compared to 1985.
- c. Minimize petroleum use.
- d. Procure energy-efficient goods and products by Federal agencies based on life-cycle cost.
- e. Provide for Federal agency participation in DSM services offered by utilities.
- f. Provide new Federal vehicle fuel efficiency requirements and outreach programs.
- g. Promote procurement of alternative fuel vehicles for the Federal fleet.

C.3.7 EO 12844, "Federal Use of Alternative Fueled Vehicles," 3 CFR (1993 Compilation). EO 12844, issued on April 21, 1993, requires the Federal Government to acquire alternative-fuel vehicles (AFVs) in numbers that exceed the EPACT requirements (i.e., FY93, 7,500 AFVs; FY94, 11,250 AFVs; FY95, 15,000 AFVs; FY96, 35 percent; FY97, 40 percent; FY98, 60 percent; and FY99, 80 percent).

C.3.8 EO 12845, "Requiring Agencies to Purchase Energy Efficient Computer Equipment," 3 CFR (1993 Compilation). EO 12845, issued on April 21, 1993, establishes energy-efficient acquisition standards for computer equipment. Microcomputers, including personal computers, monitors, and printers, must meet the EPA ENERGY STAR(r) requirements for energy efficiency (i.e., a standby low power feature) so long as the additional costs of the equipment are offset by the potential energy savings. Exemptions to this requirement are permitted on a case-by-case basis (as approved by the Agency Head). Note: All exempted acquisitions must be reported annually to the General Services Administration.

C.3.9 EO 12902, "Energy Efficiency and Water Conservation at Federal Facilities," 3 CFR (1994 Compilation). On March 8, 1994, EO 12902 was issued with provisions to accomplish the following:

- a. Expand the Federal building reduction goal from the previous 20 percent of BTU per gross square foot by the year 2000 from 1985 levels to 30 percent by the year 2005.
- b. Require agencies to develop and implement a program to increase energy efficiency in industrial buildings by at least 20 percent by the year 2005 as compared to the 1990 benchmark, to the extent these measures are cost-effective. Also, all cost-effective water conservation projects are to be implemented in these facilities.
- c. Require agencies to conduct prioritization surveys for energy and water of all their facilities within 18 months of the date of this order. A prioritization survey was defined as a rapid assessment that will be used to identify those facilities with the highest priority projects based on the degree of cost-effectiveness and to schedule comprehensive facility audits prior to project implementation.
- d. Require agencies to develop and begin implementing a 10-year plan to accomplish comprehensive facility audits based on the prioritization surveys. Approximately 10 percent of facilities are to be completed each year.
- e. Require agencies to develop and implement a plan to improve energy and water efficiency in exempt, i.e., mission variable, facilities. Also, the prioritization surveys are to provide a basis for agencies to refine their designation of facilities as exempt.

C.3.10 EO 13031, "Federal Alternative Fueled Vehicle Leadership," 3 CFR (1996 Compilation). EO 13031, issued on December 13, 1996, supersedes EO 12844 and reinstates the EPACT requirements for acquisition of alternative fueled vehicles by Federal agencies (i.e., 25 percent in FY 1996, 33 percent in FY 1997, 50 percent in FY 1998, and 75 percent in FY 1999 and thereafter). This requirement applies to general-purpose vehicles located in metropolitan statistical areas with populations of 250,000 or more. The acquisition requirements apply to vehicles leased from GSA, acquired directly from auto manufacturers, commercial leases, or conversion of conventionally fueled vehicles. The Order also establishes reporting credits for zero-emission vehicles and medium- and heavy-duty dedicated alternative fueled vehicles.

C.3.11 EO 13123, "Greening the Government Through Efficient Energy Management," 3 CFR (1999 Compilation). EO 13123, issued on June 3, 1999, supersedes EO 12902. This EO builds on and incorporates many of the provisions of EO 12902, expanding its scope and strengthening its management and implementation mechanisms. It increases the energy efficiency goal for buildings to a 35 percent reduction in energy consumption per gross square foot by 2010, compared to 1985. The EO enlarges the number of facilities subject to energy reduction goals by establishing new goals for energy-intensive facilities and by making exemption criteria more stringent. The EO also requires a 30 percent reduction in greenhouse gas emissions attributable to Federal facility operations by 2010, compared to 1990. The Order also includes explicit statements to increase the use of renewable energy, reduce the use of petroleum, and conserve water.

C.3.12 EO 13148, "Greening the Government Through Leadership in Environmental Management," 3 CFR (2000 Compilation). EO 13148, issued on April 21, 2000, supersedes several EO's and the Executive Memorandum on Environmentally Beneficial Landscaping of April 26, 1994. This EO requires Federal agencies to: 1) integrate environmental accountability into day-to-day decision-making and long-term planning processes across all agency missions, activities, and functions, 2) develop and implement environmental management systems and environmental compliance audit programs, 3) prevent or reduce pollution at its source, 4) reduce reported Toxic Release Inventory releases and offsite transfers of toxic chemicals for treatment and disposal by 40 percent by the end of 2006, 5) reduce the use of selected toxic chemicals, hazardous substances, or generation of pollutants by 50 percent by the end of 2006, 6) phase out the procurement of Class 1 ozone-depleting substances for all nonexempted uses by the end of 2010, and 7) promote sustainable management of Federal facility lands through environmentally sound landscaping practices.

C.3.13 EO 13149, "Greening the Government Through Federal Fleet and Transportation Efficiency," 3 CFR (2000 Compilation). EO 13149, issued on April 21, 2000, superseded EO 13031. This EO reiterates EPACT Section 303 requirements for acquisition of alternative fueled vehicles by Federal agencies (i.e., 75 percent of new vehicles acquisitions must be alternative fueled vehicles) and directs Federal agencies to take a leadership role in the reduction of vehicular petroleum consumption. In particular, each agency operating 20 or more motor vehicles within the United States, must develop and implement a strategy for reducing its entire vehicle fleet's annual petroleum consumption by at least 20 percent by the end of FY 2005, compared with FY 1999 petroleum consumption levels, through increases in fleet efficiencies and the use of alternative fuels. Agencies must ensure that alternative fueled vehicles are in operation and use alternative fuels a majority of the time. Agencies must also increase the average EPA combined fuel economy of new conventional light-duty vehicle acquisitions by 1 mpg by FY 2002 and 3 mpg by FY 2005, compared to FY 1999.

C.3.14 Executive Memorandum on Cutting Greenhouse Gases through Energy Savings Performance Contracts. This Executive Memorandum, dated July 25, 1998, directs all Federal agencies to: 1) maximize use of the Energy Saving Performance Contracting authority provided by EPACT; 2) propose ways to procure electricity produced using cost-effective renewable sources; 3) maximize efforts to earn ENERGY STAR(r) labels for facilities; and 4) use all available financing mechanisms to make Federal buildings more energy efficient and install renewable energy production systems, such as those called for in the Million Solar Roofs Initiative.

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